come from the fire and life insurance companies. These have nothing to gain by the manufacture and sale of lightning rods but, in common with the people themselves, do wish to know the best method of protecting life and property. Under their auspices, Weather Bureau observers can, in most cases, safely arrange for public lectures on lightning without involving the Weather Bureau in any objectionable relations.

The question as to whether it pays to protect buildings, and if so, which forms of protection are the best, are matters that can not be decided except by a careful study of local statistics. A few experiments in a laboratory, or on a given building, can not safely be made the basis of an argument because the varied locations of buildings with reference to underground strata, hills and valleys, trees, and water courses or lakes, have a very important influence, to say nothing of the character of the building itself. Any Weather Bureau observer who contemplates lecturing on this subject should make a special study of the region within 10 miles of the lecture room, so that his audience will be able to apply what he says to their own local and individual needs. Such a discussion will also undoubtedly be a contribution to the subject proper for publication in the MONTHLY WEATHER REVIEW.

A KITE AND BALLOON STATION NEAR BERLIN, GERMANY.

The Berlin correspondent of the Standard announces that the Royal Prussian Meteorological Institute in Berlin is about to make arrangements for the systematic examination of the higher strata of the atmosphere by means of special apparatus. In the grounds of the Aeronautical Observatory at Tegel—a suburb of Berlin, where Alexander and William von Humboldt were buried—registrations of the atmospheric conditions at a height of three to five thousand meters will be carried on, if possible, day and night with kites and kite-balloons. The registering apparatus, which automatically records the pressure, temperature, humidity, and wind velocity at these heights, is taken up by a kite-balloon connected with the earth by piano wire. An elevation of 4,500 meters has been attained by a train of kites even without balloons when there was sufficient wind.—*Nature, February* 8, 1900.

SOUTH AFRICAN METEOROLOGY.

The study of climatology in Africa has been diligently prosecuted for many years past within the regions that are respectively presided over by England, Germany, France, Belgium, and Portugal. A complete review of the work done by Belgium is published on pages 481–878 of the second volume of the reports submitted to the National Congress of Hygiene and Medical Climatology for Belgium and the Congo. The congress was held at Brussels in August, 1897, and the volume in question was published about a year later. It gives reports from about 190 stations in the basin of the Congo, and has very properly been designated as an unequalled collection of data relative to Central Africa. The preceding part of the volume is devoted to medical climatology, properly so called, and gives much additional data relative to temperature, moisture, rainfall, cloudiness, and sunshine. The daily records of the bright and black bulb at the station Banana, are in fact, printed in full for nearly two years, July, 1893–March, 1895.

Important reports of the work done under English auspices in South Africa, are published annually by the Meteorological Commission of Cape Colony. A general summary of the rainfall records with excellent monthly maps of rainfall was published by the Commission in 1897, as compiled by Alexander Buchan. The last annual report, viz, that for the year 1898, has just been received and gives us the latest details with regard to the organization of the service. The stations that report to the Commission are as follows:

(*a.*) First order stations	1
(*b.*) Subsidiary first order	1
(*c.*) Barometric or second order stations	54
(*d.*) Thermometric or climatological stations	17
(*e.*) Special rainfall stations	370
(*f.*) Evaporation stations	7
Total	450

Over 50 of these were started during the year 1898, and therefore, have incomplete records for that year.

Of these stations 58 are located outside Cape Colony and Bechuanaland, viz:

Basutoland	8
Orange Free State	12
South African Republic	18
German Southwest Africa	10
Zululand	6
Rhodesia	2
Swaziland	1
Natal	1
Total	58

As the remaining 392 stations are, therefore, in Cape Colony proper, this serves to show how active the English have been in the matter of climatological records. A rather large proportion of these stations, however, are south of latitude 31°, leaving us still too much in the dark as to the rainfall over the western half of Cape Colony. Students of physical geography will quickly recognize the fact that the Orange River, which runs due west along the twenty-ninth parallel, derives the greater part of its water from the rains that fall over the eastern and rainy mountainous portion of the Continent, just as is the case with the Congo River itself, a thousand miles further north. As the Orange River flows westward through a region of less than 10 inches annual rainfall, it has necessarily cut deep ravines in a country where there are no side streams but plenty of dry water courses that represent the accumulated actions of occasional showers and cloudbursts. From the study of these dry valleys and starved streams one can presumably restore the several climatic periods during which the Continent has risen with increase of rainfall, and then fallen with diminution of rainfall. The area of 40 inches annual rainfall which has moved further and further to the east, is now confined to a narrow coast belt 150 miles either side of Durban, while the region of 30 inches rainfall nearly covers all of Zululand, Natal, Basutoland, and the southern coast of Cape Colony.

The most noteworthy feature of the report for 1898 is the inclusion for the first time of returns from the well-equipped first-order station established by the De Beers Company at Kenilworth, near Kimberley. This meteorological observatory and nine associated rainfall stations distributed over the neighboring district are under the management of J. R. Sutton, Esq., B. A. The observatory is furnished with a Kew barograph, recording photographically, as also a battery, consisting of two sets of twelve each of Negretti and Zambra's patent reversing thermometers, with cylindrical bulbs, one set mounted for dry-bulb observations and the other for wet.

With regard to the accuracy of the temperature of the air, as given by the standard maximum and minimum thermometers inside of the Stevenson screen and by another pair within a much larger screen, Mr. Sutton prints a table of mean values for 1897, showing that the average tempera-